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Daily News Feed

D.N.F

20.02.2025

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Deoghar, Mob:-9162500508

Enduring legacy: Prime Minister A.B. Vajpayee with Nobel Laureate Amartya Sen, after the latter received the Bharat Ratna at the Rashtrapati Bhavan in New Delhi on February 16, 1999. THE HINDU ARCHIVES

Theory and practice: the ethical core in Amartya Sen's Weltanschauung

As a student in Shantiniketan, the Nobel Laureate would ride to the villages on his bicycle and examine the Santhals' lives, their struggle and deprivation. His entire worldview was nourished by the bond between ethics and economics, an important lesson to remember in today's world

Subhoranjan Dasgupta

Years ago, I asked the legendary teacher of economics, Professor Bhabatosh Datta, "Sir, What, according to you, is the focal point in the 'economics' thinking of your legendary student, Amartya Sen, who is not only revered as a superb social scientist but also as a profound philosopher ?" After pausing for a second, Professor Datta replied, "Economics to Amartya is like it was to Alfred Marshall – a handmaiden of ethics and a servant of practice". When I reported this evaluation to the Nobel Laureate student, he replied, almost overwhelmed with emotion, "How can I ever repay my debt to that great teacher ?"

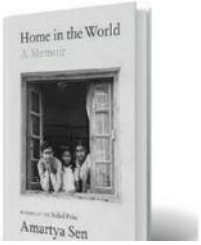
Bhabatoshbabu was unerring in his estimate. From his adolescence, Sen was wedded to 'practice'. While he was a student of Patha Bhavan in Shantiniketan, he used to ride his bicycle and spend hours in the contiguous villages inhabited by Adivasis. He examined assiduously their quotidian lives, their struggle and deprivation. He handed over the bicycle to the Swedish Academy and it is now displayed in the Nobel Museum. Stressing the worth of this simplest vehicle, Sen wrote in his memoir *Home in the World*, "This bicycle had been with me since my schooldays. I had used the bike not only to collect data on wages and prices from inaccessible places, such as old farmsheds and warehouses, when studying the Bengal Famine of 1943, but also to transport the machine to weigh boys and girls up to the ages of five to neighbouring villages from Shantiniketan to examine gender discrimination and the gradual emergence of the relative deprivation of girls". That was his praxis when he was only a schoolgoer.

A moral question

Is it then surprising that this 'committed' teenager would explore later as a researcher the intrinsic relationship between ethics or moral philosophy and economics? His entire worldview was nourished by the bond between the two, hence my first question to him on a cold, wintry night at Pratichi (the name of his house in Shantiniketan), was "Experts and laymen agree that you have gone beyond the accepted boundaries of your discipline, namely economics, and have penetrated into the realm of philosophy or ethics. Do you think this journey led to an epistemological break ?"

His answer was crystal-clear, "We need to recall that the subject of modern economics began in a very ambitious way with Adam Smith seeing economics as a part of a moral and practical philosophy. That seems to be the right perspective in which to see economics today... Indeed, many of the economic problems dealing with human welfare today, which, after all, is the basic motivation for all economics, clearly have philosophical dimensions that cannot be avoided. So, I wouldn't consider it to be a radical epistemological break but an urgent return to the very foundations."

The inexorable progress from this ethical stratum to the formulation of his leitmotif, namely the theory of Social or Moral Choice, was spontaneous. Deliberating on this crucial cogitation which fetched him the Nobel Prize in 1998, he stressed, "First, this subject enjoys a 200-year old tradition going back to the writings of Bentham, Borda and Condorcet. Second, in recent years, it has been immensely developed by Kenneth Arrow who gave it a systematic, mathematical format and posed some crucial problems which led to 'impossible results.' Third, I tried to deal with some of these 'impossibilities' and I proposed some solutions. Fourth, I found out that the format of Social Choice crossed the very narrow limits posed by utilitarianism and voting theories. Fifth, I must say that it played a major part in my understanding of the world".



A critic of utilitarianism

His sharp critique of utilitarianism led to the next query: "If not John Stuart Mill, which economist or philosopher would you revere as the most eloquent exponent of our fundamental quest, our journey 'from the realm of necessity to the realm of freedom'? His answer came like a cascade, "I affirm that Marx has discussed the issue most illuminatingly than any other economist. He was, of course, much more than an economist. In fact, in the Marxian valuation system, freedom in the positive sense, has a clear role which it does not quite have in any of the other standard moral philosophical system. I greatly value the redemptive and ethical vision of Marx."

It is this indispensable principle of ethics and related practice that inspired Sen to discover appropriate correlatives in other disciplines. He told me more than once that he attached an inestimable worth to Immanuel Kant because his philosophy was embedded in ethical or 'moral' (that is Kant's expression) engagement. His advice was, "Read Kant's The Moral Law and his Critique of Pure Reason minutely. No other Western philosopher before him cemented ethics with reason in the way he has."

Justice over rules

Similarly, he cherishes a pronounced love for the unforgettable Sanskrit play *Mudrarakhasa* by Sudraka because here the protagonist Charudatta and his consort, the dazzling Vasantasena, advocate the supremacy of nyaya or ethical justice while evaluating human conduct. In his words, "I interpreted Charudatta's priority to be the pursuit of nyaya, seeking a good world in which we can live with fairness, rather than obey the niti of fixed rules." (Memoirs, Page 101). No doubt this emphasis on ethics impels him to hit the nail on the head in our age of infinite conundrum and incessant conflict. Almost in the manner of infallible Euclid, he concludes, "All perceptible problems of the world originate from one form of inequality or another." Sen, here is not indulging in any reductionism. Rather, he is positing the ineradicable essence of all human endeavour and aspiration.

His devotion to moral praxis helps us to scissor our countless cobwebs and we recall the consummate tribute paid by Nadine Gordimer, "Sen is one of the few great world intellectuals on whom we may rely to make sense out of our existential confusion."

Subhoranjan Dasgupta, former Professor of Human Sciences, is an academic and writer based in Kolkata.

Did the iron age on Indian soil start from Tamil Nadu?

Why did Chief Minister M.K. Stalin assert that the 'history of Indian subcontinent could no longer overlook Tamil Nadu'? What did the recent report, 'Antiquity of Iron: Recent radiometric dates from Tamil Nadu', state?

R. Sai Venkatesh

The story so far:

Releasing a report on the antiquity of iron, Tamil Nadu Chief Minister M.K. Stalin proclaimed that the iron age began on "Tamil soil", placing the date 5,300-odd years ago (4th millennium BCE), and that the "history of Indian subcontinent could no longer overlook Tamil Nadu".

What had research said till now?

The usage of iron is one of the most important technological innovations in human history. The genesis of iron in India has seen several explanations, including its supposed arrival with immigrants from the West. Experts and scholars, around the middle of the last century, traced its origins back to 700-600 BCE. However, subsequent radiocarbon dating and research pushed it further back. Technical studies on materials found at several places suggested that iron smelting in India could have begun as early as the 16th century BCE.

Furthermore, in the backdrop of the results of the excavations at Uttar Pradesh two decades ago, former Director-General of the Archaeological Survey of India, Rakesh Tiwari, had highlighted in his paper, 'The origins of iron-working in India: new evidence from the Central Ganga Plain and the Eastern Vindhyas' that by the early 13th century BCE, iron smelting was "definitely known in India on a bigger scale". Iron artefacts, furnaces, and tuyeres, carbon-dated between 1800 and 1000 BCE, were found during the excavations conducted by the U.P. State Archaeological Department at Raja Nala-ka-tila (1996- 98), Malhar (1998-99), and Dadupur (1999-2001), among others. In Malhar, especially, the presence of tuyeres, slags, and finished iron artefacts, hinted at a large-scale manufacturing of iron tools. Collating all the evidence, it was said that iron smelting and manufacturing of iron artefacts were well known in the eastern Vindhyas, and iron may have been in use in the Central Ganga Plain at least from the early second millennium BC.

What about Tamil Nadu?

As for Tamil Nadu, several excavations have been underway. In 2022 – before the recent report released by Mr. Stalin pushed back the antiquity of iron – Mayiladumparai in Krishnagiri district came under the limelight after the Chief Minister placed the introduction of the iron age at 4,200 years ago (third millennium BCE) in the State. He cited the findings of the State Archaeological Department's report titled 'Mayiladumparai- Beginning of Agrarian Society; 4,200-year-old Iron Age Culture in Tamil Nadu', resulting in experts pointing out that this placed the iron age in the State in the same timeline as the copper or bronze age in other parts.

The recently released report by the State Archaeology Department, 'Antiquity of Iron: Recent radiometric dates from Tamil Nadu', attests to this and has pointed out that when cultural zones to the north of Vindhyas experienced the copper age, those in the south might have entered into the iron age already, owing to the limited availability of commercially exploitable copper ore. Target-oriented excavations were initiated by the State Archaeology Department, the Archaeological Survey of India, and others in recent years across places such as Sivagalai, Adichanallur, Kilnamandi and Mayiladumparai in the State to arrive at a panoramic view of the nature of Tamil Nadu's iron age. "Based on the findings, we have placed the date at 3,345 BCE to 2,953 BCE. On taking the mean age of this, we can arrive at the conclusion that iron age on Tamil soil started in the first quarter of the 4th millennium BCE," an archaeology scholar told *The Hindu*, while reiterating that this, however, need not pave the way for assertions that the iron age originated from Tamil soil itself.

With this, the doors of further research into Tamil history and culture have opened up.

THE GIST

- Releasing a report on the antiquity of iron, Tamil Nadu Chief Minister M.K. Stalin proclaimed that the iron age began on "Tamil soil".
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On building resilient telecom infrastructure

What does the Coalition for Disaster Resilient Infrastructure report state? Why do telecom networks face elevated risks in coastal regions in times of disaster and calamity? Why are undersea cables preferred over overland cables? Is power failure a significant challenge?

EXPLAINER

Aroon Deep

The story so far:

The Coalition for Disaster Resilient Infrastructure (CDRI), a multilateral organisation launched by Prime Minister Narendra Modi in 2019, put out a report earlier this month studying Indian telecom networks' preparedness in the event of disasters. The report suggests ways in which State governments can better prepare for calamities that may impact telecom networks.

Why is it important?

Telecom networks are crucial to handling disasters, because they allow the State and National Disaster Management Authorities to communicate quickly with local municipalities and the State and Union governments; something that is important when lives and property are at stake. Telecom networks are particularly vulnerable, as they comprise cabling that may not be fully underground, towers that may not be able to withstand high wind speeds, and because they rely on a steady flow of electricity, which is frequently disrupted by disasters like cyclones and earthquakes.

How are they impacted in disasters?

On top of towers being hit by high-speed winds, overland cables – as opposed to underground ones, which can be protected from many disasters – can snap. Coastal regions face elevated risks, as that is where undersea cables connect India with the global internet. If the landing stations of these cables are impacted, there can be massive network disruptions as telecom operators try to reroute traffic through other cables.

The lack of power during disasters remains a major issue. "When I first joined here, I did my own analysis of data of telecom outages since 2016, and found that the real issue was power," Sanjay Agrawal, deputy director general of disaster management at the Department of Telecommunications said.

Major hazard: Officials remove Optical Fibre Cables which were hanging in Bengaluru, 2018. FILE PHOTO

What can be done?

Severed undersea cables have a time-consuming repair process that involves a repair vessel arriving near the coast and rejoining the cables. However, since much of the disruption is attributable to power failures, much can be accomplished during a disaster by maintaining or restoring power supply to telecom towers and the network operating centres to which they're connected. Telecom operators have typically never deployed towers assuming 24/7 power supply – with the possible exception of Mumbai – and have battery as well as fuel backup.

Pradeep Kumar Jena, former Chief Secretary of Odisha, said, "sometimes a tower operator may not have enough power available at a time of disaster for whatever reason – one can't [pass around] blame at that point of time," and when this happens, "we decide, let's give every telecom operator 50 litres of fuel." Even if the fuel is wasted, the ₹50 lakh spent on it goes a long way in keeping networks online, he said. This is complemented with information from the DoT. "We get data from all telecom operators on damages to their assets for every disaster," Mr. Agrawal said. "We have software to monitor in real time what telecom assets are down." As such, resources can be deployed quickly to bring sites back online.

How can networks be protected?

The CDRI report recommends a few measures to develop a resilient telecom network These include greater data collection and more coordination among officials, a more robust power infrastructure (resilient power infrastructure is also an area where CDRI focuses an enormous amount of effort on), and requiring cell towers to withstand higher wind speeds, especially in coastal States and districts where hurricanes make landfall. The CDRI also advocates for a dig-once policy, which recommends building as much underground civil infrastructure, like water and gas supply lines, drainage and fibre optic cables simultaneously, reducing the risk of cables being damaged when other infrastructure is built. Existing damage to underground cables can greatly exacerbate disruptions when other parts of a network go down.

"The short- to medium-term roadmap suggests the need to update disaster damage and loss data format, mainstream disaster risk modelling into telecommunications infrastructure planning across all miles, strengthen telecommunications asset design based on local and regional hazard vulnerability profiles," and other steps to plan ahead, the report says. There are also commercial interventions that the report touches on. A key one is parametric insurance, a system where telecom operators are not left to bear the commercial burden of a disaster all by themselves, and are thus financially incentivised to bring networks back online rapidly (and presumably to nudge them to disaster-proof their infrastructure well enough to keep premiums down).

Telecom resilience comes down to a mix of both massive interventions as well as small investments that can have an outsize benefit. For instance, during heavy rains, diesel generators can stop working even at knee-level flooding. One simple intervention that can go a long way in keeping towers online is by simply installing the generator a little higher up the tower, so that the backup power can kick in even during flooding.

THE GIST

- Telecom networks are crucial to handling disasters, because they allow the State and National Disaster Management Authorities to communicate quickly with local municipalities and the State and Union governments.
- The CDRI report recommends a few measures to develop a resilient telecom network These include greater data collection and more coordination among officials, a more robust power infrastructure, and requiring cell towers to withstand higher wind speeds, especially in coastal States and districts where hurricanes make landfall.
- Coastal regions face elevated risks, as that is where undersea cables connect India with the global internet.

Myanmar, Manipur, and strained borders

Political instability in Myanmar and the resulting refugee influx are straining Northeast India's security, economy, and border management, necessitating a response to maintain stability and economic engagement

Sanjay Pulipaka

Chairperson of the Politeia Research Foundation. Views expressed are personal

Northeast India has experienced prolonged spells of insurgency. However, over the past few decades, large parts of the region have remained free of insurgencies. This relative peace has allowed for the operationalisation of massive infrastructure projects. But, as the violence in Manipur attests, the gains made are experiencing increasing stress because of the political developments in Myanmar.

The military coup in Myanmar in February 2021 has encountered widespread disapproval from the people of that country. The civil disobedience movement against military rule subsequently evolved into armed resistance by the People's Defence Forces (PDFs). The coordinated attacks by the PDFs and the Ethnic Armed Organisations (EAOs) pushed the Myanmar military (Tatmadaw) to cede control over large parts of the country. In a futile attempt to regain territory, the Tatmadaw resorted to indiscriminate use of force. There were instances when civilian areas were subjected to aerial and artillery bombardment by the Tatmadaw. The Sagaing Region, Chin and Kachin States – bordering Northeast India – often witnessed heavy fighting between resistance forces and the Tatmadaw.

The influx of Myanmar refugees has generated diverse responses in India's Northeastern States. SPECIAL ARRANGEMENT

Movement of refugees

In Northeast India, there are many ethnic groups, such as the Mizo-Chin-Kuki, that inhabit both sides of the India-Myanmar border and share strong community and familial ties. Recognising these ethnic interactions, the governments of both countries instituted a Free Movement Regime (FMR) after Independence, for people living within 40 kilometre on either side of the India-Burma border, which was subsequently reduced to 16 km. The FMR allowed people in the designated areas to move across the border without being subjected to cumbersome paperwork such as visas. Additionally, a wide range of economic activities, such as Border *haats* were established to encourage local cross-border trade and promote livelihoods.

However, these attempts to convert border zones into launch pads of economic engagement received a setback after the recent violent conflict in Myanmar, which resulted in a large-scale refugee movement into India. The movement of refugees has negatively impacted India's border management strategies.

According to the United Nations High Commissioner for Refugees estimates, as of December 31, 2024, approximately 95,600 refugees from Myanmar had moved into India. Of these, about 73,400 refugees reportedly reached India after the recent military coup. However, given the porous border, it is difficult to accurately estimate the number of Myanmar refugees in India. The influx of Myanmar refugees has generated diverse responses in India's Northeastern States. In Mizoram, various civil society organisations and the State government have shown considerable empathy for the refugees due to their shared ethnic identity.

On the other hand, in Manipur, there are concerns that the influx of refugees is disturbing the fragile ethnic balance and has become an important variable in the Meitei-Kuki conflict. Responding to such concerns, last year, the Union Home Minister announced that the FMR would be abolished to maintain internal security and "to maintain the demographic structure of India's Northeastern States bordering Myanmar." However, it is not certain if India's Ministry of External Affairs has formally communicated to its Myanmar counterpart about the withdrawal from the Agreement on the Land Border Crossing. Meanwhile, in December 2024, a new framework was operationalised, which would allow people living within 10 km of the border, including in Manipur, to cross the India-Myanmar border with a permit at designated entry/exit points.

Rather than expanding the FMR to facilitate greater economic engagement between India's Northeast and Myanmar, it is being increasingly constricted. Moreh in Manipur, once a bustling border trade town, has borne the brunt of recent violent developments. The decline in the border trade meant that Moreh's emergence as India's gateway to Southeast Asia may not materialise anytime soon. Plans to improve the India-Myanmar-Thailand trilateral highway have also taken a back seat.

Focus Manipur

Along with India, China is also experiencing negative spillovers due to political instability in Myanmar. To prevent the unauthorised movement of people, China has fenced a few critical sections of its border with Myanmar. Beijing has strong relations with some EAOs in Myanmar and deployed them to tackle the criminal/drug syndicates operating from there. China deploys considerable economic resources and is a member of the United Nations Security Council (UNSC), which gives it greater space to engage with diverse actors in Myanmar with relative ease.

Unlike China, India is not a member of the UNSC and must operate within the liberal democratic framework. Yet, India must craft a more calibrated and comprehensive response to developments in Myanmar lest Manipur will continue to fester.

Urgent requirements

To ensure peace in the region, the consolidation of unhealthy relationships between Indian insurgent groups and armed groups across the border needs to be arrested. Therefore, it becomes imperative to engage various ethnic organisations in Myanmar. There is also an urgent need to provide increased humanitarian relief and, in the long run, develop health care and educational infrastructure in Myanmar near the border with Manipur and Mizoram in India. These measures would ensure that the population seeking basic needs does not have to make strenuous efforts to enter India. Further, India, in collaboration with select neighbours of Myanmar, must nudge all the stakeholders in that country to move towards a more federal democratic polity.

With political uncertainty in Bangladesh and the civil war in Myanmar, the prospect of Northeast India's enhanced external economic engagement is dim at the moment. Therefore, the Indian government will have to spend more resources to maintain economic growth in the region. Despite the current security situation along the borders, including in Manipur, the long-term objective of border management practices in Northeast India should be to increase economic interactions with Southeast Asian countries. The policy framework should be geared to achieve such an objective at the first available opportunity.

Closer than ever

India and Qatar have deepened their ties despite differences

The visit of the Qatari Amir, Sheikh Tamim bin Hamad Al-Thani, a decade after his last visit to India, has led to a reaffirmation of the deep ties between two countries. While they do not always share the same worldview, both countries recognise each other's importance on the regional and global stage. For Qatar, India is a globally connected power, maintaining a balance with all players in the West Asian region including Saudi Arabia, the UAE, Iran and Israel. Indian expatriates are often seen as the backbone of Qatari economic activity. For India, Qatar is a Gulf power, a huge source of remittances and a partner with a major geo-strategic role. Qatar also provides 45% of India's LNG needs, which makes up about half of the bilateral trade of $15 billion between the two countries. While Qatar is home to a U.S. military base, which houses the U.K. and Australian air forces, it has also hosted groups such as the Hamas and the Taliban, and maintains ties with regional militia groups. In its recent decision to broaden its engagement with the Taliban regime in Afghanistan, the Narendra Modi government has leaned on the Qatari leadership. In addition, the Qatari Amir's decision to pardon eight former Indian naval personnel, reportedly accused of spying and handed the death sentence in 2023, has helped forge a closer understanding. It is fitting and long overdue, therefore, that after the talks in Delhi, India and Qatar decided to upgrade ties to a strategic partnership, given that India already has strategic partnerships signed with the Gulf Cooperation Council including the UAE, Saudi Arabia, Oman and Kuwait. They also signed a double taxation avoidance agreement and MoUs in areas including sports and youth affairs. They agreed to double bilateral trade by 2030, and Qatar is to invest $10 billion in India in infrastructure and manufacturing sectors and other areas.

While the joint statement and readouts dwelt on the bilateral bonhomie, the geopolitical undertones of their summit cannot be ignored. The Qatari Amir's visit comes amidst turmoil in the Gulf region over the Israel-Gaza conflict and U.S. President Donald Trump's outrageous plan to clear two million Palestinians from their homeland in the name of regional peace. Every country in the Gulf region has voiced its opposition to the Trump announcement, and New Delhi's relative silence has been noted. While the joint statement said that both sides conveyed their respective positions on the "Israel-Hamas issue", it did not detail those positions. As Arab, GCC and OIC members meet this week to discuss the challenge from developments in Gaza, the India-Qatar talks may have delivered the opportunity for both sides to bridge that divide between them, even as Delhi and Doha committed to a much stronger, forward-looking bilateral partnership.

Manipur is in need of 'greater common good' politics

Pradip Phanjoubam

is Editor, Imphal Review of Arts and Politics, and the author of two books

On February 13, 2025, Article 356 of the Constitution was invoked in Manipur and the State came under President's Rule. It made way for the President of India to take charge of all administrative and legislative functions of the State from Manipur's Council of Ministers. The State Assembly, however, has not been dissolved but kept in 'animated suspension' instead, indicating that rather than having a fresh election to the Assembly after President's Rule, the ruling Bharatiya Janata Party (BJP) and its legislators are being given time to tide over their differences to resume power.

There were other reasons

For 20 long months of lawless anarchy in the State, ever since communal mayhem descended on it on May 3, 2023, the Union government did not consider this emergency step despite there being demands for it from many quarters. Why the move now? Obviously, the primary consideration is still not the anarchy but some other.

One of these is technical. Article 174 of the Constitution requires that the space between two State Assembly sessions is not more than six months – a deadline which expired on February 12. The deadline had closed in because the Assembly had skipped its winter session, and, therefore, the Budget session was planned to begin on February 10, two days ahead of this deadline. However, on the afternoon of February 9, the then Manipur Chief Minister, N. Biren Singh, resigned, a move that was probably compelled by the BJP's central leadership in order to avoid a possible split in the BJP legislative party as dissidence against Mr. Singh was becoming intense. The Opposition Congress party was poised to move a no-confidence motion against the government, and it was feared that dissenting ruling MLAs were ready to risk disqualification to support the motion if Mr. Singh remained as Chief Minister.

Just after accepting Mr. Singh's resignation, the Manipur Governor, Ajay Kumar Bhalla, for unexplained reasons, declared the Assembly session scheduled to begin the next day as "null and void". He had probably not been briefed about the February 12 deadline. He may have also thought that a new Chief Minister could take charge and the Assembly summoned again. However, a bitter struggle between the loyalists of Mr. Singh and dissidents on who should succeed Mr. Singh made this impossible.

The State, which was in a constitutional limbo by then, with only a caretaker government and a lapsed Assembly session deadline, had little other option than having President's Rule invoked. This was done on February 13, without dissolving the Assembly.

According to a Ministry of Home Affairs reply to an online Right To Information application in 2016, Manipur has had President's Rule 10 times. This will be its eleventh time, making it one of the most vulnerable States to have this extreme measure taken. This also reflects the fractured nature of its political landscape, but this is not surprising given its ethnic diversity.

Manipur has 33 recognised Scheduled Tribes, most falling into the Naga and Kuki (now Kuki-Zo) groupings. There are also the majority Meiteis (and Pangals or Meitei Muslims) who are considered non-tribals. In addition, there are several other non-tribal communities such as Nepalis, Punjabis, Tamils and Marwaris, who constitute a substantive percentage of the State's projected population of about three million. Unfortunately, they are virtually invisible and taken for granted.

Focus Manipur

The politics of populism

Adding to this complication is what has been termed as the politics of populism. A book, *Righteous Demagogues: Populist Politics in South Asia and Beyond* (2024), by Adnan A. Naseemullah and Pradeep K. Chhibber, provides many insights even into the problems unfolding on micro canvases such as Manipur. A brief sketch of their proposition will be helpful.

The authors start with the Google dictionary definition of political populism, which is "a political approach that strives to appeal to ordinary people who feel that their concerns are disregarded by established elite groups". What is interesting and relevant are the three broad categories of political populism that the authors profile.

The first is "Reordering" populism, and its representation is broad, not sectarian. Its appeal is the idea of restructuring the moral order, such as by championing, or else using, issues such as poverty uplift and farmer's rights to further political gains. Politicians who successfully push such agendas and emerge as leaders also tend to be majoritarian and autocratic.

The second is "Additive" populism, in which would fall campaigns for inclusion by those excluded. A political movement, for instance by Nepalis, for inclusion in the larger scheme of the Manipur political establishment would fit into this category. These seek realignment and not radical restructuring.

The third is what the authors call "Quotidian" populism. These popularist politicians seek to create their exclusive constituencies, and then to have the exclusivity of their constituencies preserved for their vested ends. They are partisan and their popularist political interest is to keep societies polarised.

Quite obviously, in the hotly contested political arena of Manipur, there are players of all these different brands of political populism. Those who follow the politics of Manipur in the wake of the State's nearly two-year-old ethnic strife between two of its major communities, the Meiteis and Kuki-Zos, would have also noticed this.

A fight that grew

This fight should have remained between the Government of Manipur, then headed by N. Biren Singh, and the Kuki-Zo tribes, considering the chief reasons for all the animus were Mr. Singh's drive against forest encroachers, poppy cultivation and illegal migration. These were pursued rather insensitively and with accusatory populist fanfare that would have been dehumanising and humiliating for those at the receiving end. Unfortunately, the politics of populism of Mr. Singh as well as those of his elite adversaries on the other side of the political fence, competitively built on waves of ethnic paranoia in their respective constituencies for their brands of politics to ride on, ensuring in the process that the hostilities were transformed into communal enmity.

The current spell of President's Rule is unlikely to last for long and a new BJP government could probably take charge sooner rather than later. But whether there is such a government in place or whether President's Rule continues, the challenges ahead are far from simple. On consideration of the irredenta reality, population movements across the international border must be allowed to continue, but not in an unaccounted manner like in the past. Similarly, the drive against poppy cultivation or forest encroachment must continue, but sensibly and sensitively.

Above all, the effort must be for an end to senseless communal hostilities. In the long run, politics must shed populism and be consensual instead, shaped by the principle that promoting the greater common good guarantees the enlightened self-interest of all. Manipur became a full-fledged State in 1972, but its political history has ample evidence of this character, and anybody from any community could emerge as Chief Minister based solely on calibre.

The senseless communal hostilities must end and the State's politics must shed populism, becoming consensual instead

An artist's concept of Sagittarius A*, surrounded by a swirling accretion disk of hot gas. REUTERS

Glimpses of violence around Milky Way's central black hole

Reuters

NASA's James Webb Space Telescope is providing the best look yet at the chaotic events unfolding around the supermassive black hole at the center of our Milky Way galaxy, observing a steady flickering of light punctuated by occasional bright flares as material is drawn inward by its enormous gravitational pull.

Webb was launched in 2021 and began collecting data in 2022, allowing astronomers to observe the region around the black hole, called Sagittarius (Sgr) A*, for extended periods for the first time.

The region around Sgr A* was seen as bubbling with activity rather than remaining in a steady state. In particular, the researchers observed a constant flickering of light from the swirling disk of gas surrounding the black hole, called an accretion disk. This flickering appears to be emanating from material very close to the event horizon, the point of no return beyond which everything is dragged into oblivion.

There were also one to three large flares over any 24-hour period with smaller bursts in between.

"The accretion disk is a very chaotic region filled with turbulence, and the gas gets even more chaotic and compressed as it approaches the black hole, under extreme gravity," said astrophysicist Farhad Yusef-Zadeh of Northwestern University in Illinois, lead author of the study published on February 18 in the astrophysical journal *Letters*.

"Blobs of gas are bumping into one another and, in some cases, being forced or compressed together by the strong magnetic fields that exist within the disk, somewhat similar to what happens in solar flares," said astrophysicist and study co-author Howard Bushouse of the Space

Researchers observed a flickering of light from the accretion disk. This flickering appears to be emanating from material very close to the event horizon, the point of no return

Telescope Science Institute in Baltimore.

While these bursts arise from a mechanism similar to solar flares, which blast hot charged particles into space from our sun, they occur in a different astrophysical environment and at a vastly higher energetic level.

As such, the new observations are not of the black hole itself but of the material surrounding it.

Sgr A* possesses roughly four-million-times the mass of our sun and is located about 26,000 lightyears from the earth.

While the events observed around Sgr A* are dramatic, this black hole is not as active as some at the centres of other galaxies.

The new findings were based on a total of about 48 hours of observations of Sgr A* made by Webb over a year, in seven increments ranging from 6 to 9.5 hours, as the researchers obtained continuous measurements of the brightness around the black hole.

The observations are providing insight into how black holes interact with their surrounding environments. Yusef-Zadeh said that about 90% of the accretion disk's material falls into the black hole while the rest is ejected back into space.

This accretion disk appears to be made up of material accumulated from the stellar winds of nearby stars captured by the gravitational force of Sgr A*, rather than from a star that wandered too close and got shredded, the researchers said.

Only second animal to find its way by polarised moonlight found

The way the polarisation patterns of sunlight and moonlight are oriented in the sky allows animals to use it as a compass. Nocturnal bull ants were able to detect polarised moonlight throughout the lunar cycle for foraging, even under a crescent moon when the moonlight is 80% less intense

Madhurima Pattanayak

Many nocturnal animals, including insects such as ants and bees, follow the moon's position to find their way when they go foraging. But the moon waxes and wanes in a cycle and can be obscured by clouds or overhanging tree canopies, so the animals cannot always directly track its position.

Now, for the first time, scientists at Macquarie University, Sydney, have found that two nocturnal bull ant species (*Myrmecia pyriformis* and *Myrmecia midas*) make their way at night with the help of polarised moonlight, which, while being dimmer even than moonlight, contains unusual patterns that can point the way.

This is also only the second instance of an animal being found to use polarised moonlight to orient itself.

A close-up view of a *Myrmecia pyriformis* ant. Before the present study, scientists already knew *M. pyriformis* ants used polarised sunlight to navigate, but this light fades as the sun sets. PATRICK KAVANAGH/FLICKR (CC BY)

Returning late

Seen from the ground, both sunlight and moonlight contain characteristic polarisation patterns. The way these patterns are oriented in the sky, rather than the location of the light source alone, allows animals to use it as a compass.

The study found the nocturnal bull ants were able to detect and use polarised moonlight throughout the lunar cycle for foraging, even under a crescent moon when moonlight is 80% less intense.

The polarisation patterns in moonlight are also a million-times dimmer than in sunlight. So while many animals are known to use the latter, very few use the former. The first animal found to use polarised moonlight was the dung beetle.

Scientists already knew *M. pyriformis* and *M. midas* ants used polarised sunlight to navigate, but this light fades as the sun sets. The study's researchers were also aware most of the foraging *M. midas* ants returned overnight while the night-time activity of *M. pyriformis* ants increased on full-moon nights.

The e-vector pattern

The sun and the moon both emit unpolarised light. Light is an electromagnetic wave, with the electric field oscillating perpendicular to the magnetic field, and both fields oscillating perpendicular to the wave's direction of motion.

When the light moves through the earth's atmosphere, it is scattered by particles in the air and becomes polarised. Polarisation denotes a specific orientation of the electric field.

Both sunlight and moonlight scattered in the atmosphere become linearly polarised, meaning the electric field oscillates in a single, fixed plane perpendicular to the wave's motion. The scattered light is also oriented 90° to the incident light.

As numerous light waves are scattered in this way, an unusual pattern emerges in the sky when seen through a filter that can detect polarised light. This is called the e-vector pattern.

"[W]hen the sun/moon is near the horizon, the pattern of polarised skylight is particularly simple, with uniform direction of polarisation approximately parallel to the north-south axes," the researchers wrote in their paper.

The stability of this pattern gives an animal that can detect it a natural compass.

Under the moon

The researchers created linearly polarised light and cast it on a population of nocturnal bull ants in the wild, then tracked the ants' ability to orient themselves relative to their two nests, located more than 50 metres apart.

Under full, waxing, and waning moon conditions, the researchers rotated their polariser clockwise by 45° and later counterclockwise by 45°. In each instance, the e-vector of the light falling on the ants changed. The ants responded by adjusting their path to the left and later to the right. Once the foragers crossed the area where the researchers' light was being cast, they adjusted once more to reorient themselves according to the e-vector pattern in the sky.

The researchers used paired tests to compare the magnitude of these shifts between the initial orientation and the filter exit and again between the filter exit and the reorientation. The paired tests are a statistical tool with which researchers can determine whether paired observations – shift magnitudes in this case – differ between two samples.

"Shift magnitude is the number of degrees the ants alter their headings under the filter," Cody Freas, a doctoral student at Macquarie University and one of the study's coauthors, said.

While the nocturnal bull ants were found to use polarised moonlight throughout the lunar cycle, their heading shift magnitudes dropped during the waning phases. The researchers called this finding "unexpected". Likewise, foraging ants had substantially higher shift magnitudes during the waxing full moon and waxing quarter moon phases compared to the waning phases.

> The sun and the moon both emit unpolarised light. When the light moves through the atmosphere, it is scattered by particles in the air and becomes polarised. Polarisation denotes a specific orientation of the electric field

Under the new moon, when the ambient moonlight e-vector disappeared, the paths of the foraging ants did not change significantly when the polarisation filter was rotated in either direction. The ants also didn't reorient their paths to a meaningful degree once they exited the filter.

The researchers used another statistical test to compare the differences in shift magnitudes when the filter was rotated clockwise and counter-clockwise across lunar phases.

Shift magnitudes, vector distances

During the full moon, when moonlight reaches 80% of its maximum intensity, the shift magnitudes were 36.6° to 43° at Nest 1 and 21.5° to 28.9° at Nest 2. According to Freas, the difference between the two nests is likely due to the long distance that foragers at Nest 1 traversed on their trip to the foraging tree, 6 m, versus 2.5 m from Nest 2.

"At short vector lengths, like at Nest 2, the vector, which is informed by the sky compass, becomes less reliable," he said, adding that the longer the distance, the more "powerful" the guidance is.

"Thus, if the ant walks 6 m to the foraging tree, we can say that the ant has a 6-m vector pointing back to the nest. This vector also [shrinks] as the ant travels in the nest direction. It's an updating estimate of how far away the nest is at any point. So when we release an ant halfway home, it still has the vector from where it was captured (6 m)."

According to Clarke Scholtz, emeritus professor of entomology at the University of Pretoria, South Africa, and Marie Dacke, a professor of sensory biology at Lund University, Sweden, "The methods used in the study are appropriate." Neither was involved in the study.

"While we cannot compare solar and moonlight polarisation navigation in outbound ants ..., striking similarities occur when comparing solar and moonlight polarisation navigation in ants homing to the nest," the researchers wrote in their paper.

"... it remains unknown if these ants are tracking their lunar polarisation compass by using a time-compensated lunar compass, or if the compass is updated with reference to other cues, such as the panorama, throughout the night," they added. Honeybees and desert ants have been known to use such cues together with sunlight. They said future research could check whether the ants have a way to say where the moon is after specific intervals by "exposing or blocking access to the sky and familiar panorama for set time periods when the moon is naturally visible overnight...".

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Rekha Gupta, a grassroots leader who has served in key organisational roles

Shalimar Bagh MLA-elect defeated AAP's Bandana Kumari by 29,595 votes in the Delhi election; she says her selection as CM is a matter of pride for every woman in the country and BJP will fulfil all commitments made by it to people of Delhi

Satvika Mahajan
Ashna Butani
NEW DELHI

With a 30-year career in politics, Rekha Gupta, MLA-elect for Shalimar Bagh, is set to take over as the next Chief Minister of Delhi on Thursday.

A grassroots leader with an RSS-ABVP background, she began her political journey as a B.Com. student in Daulat Ram College of Delhi University. She joined the Akhil Bhartiya Vidyarthi Parishad (ABVP) in 1992.

She was announced as the BJP pick after 48 MLAs from the party unanimously elected her the leader of Delhi BJP Legislature Party. Accepting the role, Ms. Gupta said: "It is a matter of pride for every woman in the country. We will fulfil all commitments made by the BJP in Delhi. It will be my life's purpose."

Change of guard: Delhi CM-designate Rekha Gupta with Lieutenant-Governor Vinai Kumar Saxena on Wednesday. ANI

Defeating Bandana Kumari, a three-time MLA from Shalimar Bagh and a former Deputy Speaker from the Aam Aadmi Party's short stint in 2013, by a margin of 29,595 votes, the 50-year-old has been a three-time councillor from Shalimar Bagh.

She joined the BJP in the 2000s, serving in key organisational roles, including as Delhi BJP general secretary, president of the BJP's Mahila Morcha, and national vice-president of the Uttar Pradesh Mahila Morcha. She was an office-bearer of the BJP's Yuva Morcha wing.

However, her journey in politics has not been without losses – the Chief Minister-designate contested from Shalimar Bagh in the 2015 and 2020 Assembly polls unsuccessfully.

'Message to AAP'

Born in Julana, Haryana, the BJP's pick has been a clear message to the AAP. A party insider said, "The previous Chief Minister was referred to as a 'temporary CM', and now the BJP has come with a strong face to counter that."

In 1995, she became the secretary of the Delhi University Students' Union (DUSU) from the ABVP, and she went on to become the DUSU president the following year.

Referring to her as a fighter, several BJP leaders who served with Ms. Gupta as councillors said she would fight for women's rights. She raised the need for toilets for women. Working on basic facilities such as parks and libraries for the people of her area, Ms. Gupta is a leader who has emerged from the ground, and her quiet determination has led her to become the Chief Minister of the capital.

During her campaign in the lead up to the 2025 Assembly polls, Ms. Gupta had promised to make a 'Viksit Delhi' that a 'Viksit Bharat' deserves as its capital.

‘Neither ecologically sustainable nor ethical’: new study expresses concern over translocation of African cheetahs

Hemanth C.S.
BENGALURU

A new study by the Centre for Wildlife Studies (CWS), which examines the ethical, ecological and welfare challenges associated with the translocation of African cheetahs to India, has expressed concern over the translocation of the animals and also raised questions about its scientific merit and long-term viability.

The study, ‘Delineating the environmental justice implications of an experimental cheetah introduction project in India’, was published in *Frontiers in Conservation Science*.

According to the CWS, the study highlights that the translocation of African cheetahs to India has resulted in significant challenges, with a mortality rate of 40%-50% in the first phase of the project, far below the expected survival rate of 85%.

Madhya Pradesh Chief Minister Mohan Yadav releasing a female cheetah in the Kuno National Park on February 5. FILE PHOTO

Under Project Cheetah, so far 20 African cheetahs (*Acinonyx jubatus*), eight from Namibia in September 2022 and 12 from South Africa in February 2023, were introduced into the Kuno National Park (KNP) in Madhya Pradesh.

The CWS also said that the cheetahs involved in the project have experienced high levels of stress, with over 90 chemical immobilisations and regular veterinary interventions, raising concerns about their physical and mental health.

It also said that African cheetah populations are already under pressure, with only around 6,500 mature individuals remaining in the wild.

“With an initial mortality rate of 40%-50% in these cheetahs, currently all individuals are being kept in captivity in India, with plans to import 12 individuals annually till a viable population is established. The researchers of this paper argue that the project’s reliance on a continuous supply of cheetahs from southern Africa, is neither ecologically sustainable nor ethical,” it said.

> Cheetahs have experienced high levels of stress, with over 90 chemical immobilisations and regular veterinary interventions, raising concerns about their physical and mental health.
>
> **CENTRE FOR WILDLIFE STUDIES**

The study was led by Yashendu Chinmayee Joshi, doctoral fellow at the Centre for Wildlife Studies, along with co-authors Stephanie E. Klarmann, Blood Lions Non Profit Company (NPC) and University of Johannesburg, South Africa; and Louise C. de Waal, Blood Lions Non Profit Company (NPC), South Africa.

Inclusive approach

The authors have suggested that a more justice-informed approach would ensure that conservation decisions are based on inclusive, participatory processes, which take into account the diverse values people place on nature.

“Our current approach risks overlooking diverse knowledge systems and values, the nuanced ways in which people interact with nature, their perceptions of wildlife, and importantly, their consent to bear the consequences of such initiatives,” said Mr. Joshi.

“Conservation efforts should focus more on their ability to maintain sustainable shared spaces between humans and wildlife, rather than causing further division and distress,” he added.